

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

American Waste Industries, Inc.
Norfolk, Virginia
Permit No. TRO-61038

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, American Waste Industries, Inc. has applied for a Title V Operating Permit for its Norfolk facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

_____ Date: _____

_____ Date: _____

Francis L. Daniel, Regional Director for
Harold J. Winer
Deputy Regional Director

Date: 5/05/04

FACILITY INFORMATION

| | |
|------------------|--|
| <u>Permittee</u> | G. Elliot Schaubach, Jr. 508 East Indian River Road Norfolk, Virginia 23523 |
| <u>Facility</u> | American Waste Industries, Inc. 508 East Indian River Road Norfolk, Virginia 23523 |

AFS ID No.: 51-710-00219

SOURCE DESCRIPTION

SIC Code: 4953 – Medical and solid waste incineration facility, subject to rules for HMIWI plants.

AWI operates two medical waste incinerators with dry sorbent injection controls, water quenching and fabric filter precipitate capture. The facility is currently in compliance with all applicable requirements and operates year round. Other emission units include a small package boiler and the requisite ash-handling operation. Each unit has a maximum waste capacity of 23.4 tons per day. The incinerators (INE-002 and INE-003) are considered existing equipment under state regulations and are therefore regulated under Virginia's Article 4-44. The medical waste to be processed is fed to the incinerators in boxes or via trash carts at a rate of every 5-7 minutes. The incinerators are dual-chamber units with a primary and secondary stage. The primary stage is operated with minimum combustion air and a low interior velocity at a minimum of 1400 degrees F. The secondary stage is supplied with excess air and turbulent mixing zones to complete the combustion process at a maximum of 1800 degrees F. The incinerators have been equipped with additional pollution control devices, besides the secondary combustion chamber. Other control equipment includes: dry scrubber system, water spray-quench chamber, lime reactor and fabric filters.

The facility is considered a major source for Title V permitting because of Hydrochloric acid emissions and is located in an attainment area for all pollutants. The facility was previously permitted under a NSR Permit issued on March 31, 1986 and amended on February 26, 1988, February 22, 1990 and again on August 8, 2001. The current NSR permit addressed new applicable requirements that drew from State Regulations at Article 4-44, promulgated on July 1, 2000 and amended July 1, 2003. Then the NSR permit issued August 8, 2001 reflected the new applicable requirements for HMIWI facilities in the Commonwealth of Virginia. The issuance of this new NSR permit and the superseding of the old NSR permit caused the Title V permit of 1999 to be in need of updating. The guidance for reopening Title V permits to include new regulatory items or changes to the underlying NSR permit considers the time remaining to the expiration date of the Title V permit. Since there were less than three years remaining until the Title V expiration, the NSR permit took precedence over the 1999 Title V permit in the interim. The practical reason for this is the source of the regulations that the NSR permit drew from. The citations in the 1999 Title V permit show that applicable requirements were derived from the regulations in effect in 1988 and 1990, as listed in the NSR permit from that era. Therefore, while it is appropriate to cite these regulations in the 1999 Title V permit, it is no longer correct to do this in a Title V renewal permit.

STACK TEST RESULTS

As part of the requirements for HMIWI sources, a stack test was performed during July 2002 for multiple pollutants, to verify compliance with the new emission limits and to establish the maximum and minimum parameters for operation of this type of incinerator. In addition, Method 9 tests for opacity were conducted and the results were recorded on the field data sheets. Specifically, as a 'Large' category incinerator, AWI must test for PM, opacity, CO, dioxin/furan, HCl, Lead, Cadmium and Mercury. The results of the stack test are attached to the NSR permit as 'Attachment A'. An initial stack test for this source type must provide the following data and values to be used for compliance verification:

- (1.) The Maximum Charge Rate (of infectious waste to each incinerator unit)
- (2.) The Minimum Secondary Chamber Temperature (during a successful test run)
- (3.) The Maximum Fabric Filter Inlet Temperature (data from the test runs)
- (4.) The Minimum Dioxin/Furan Sorbent Flow Rate (lbs/hour required to meet limits)
- (5.) The Minimum Hydrogen Chloride Sorbent Flow Rate (lbs/hour to effect control)
- (6.) The Minimum Mercury Sorbent Flow Rate (lbs/hour required to meet limits)
- (7.) Levels of PM, opacity, CO, dioxin/furan, HCl, Pb, Cd and Hg.

The stack test yielded some surprises in that the Dioxin/Furan emission rate was much lower than the regulatory limit of 55.0 grains per 1×10^9 dry standard cubic feet at 7.0% Oxygen. The average of three runs showed that the Dioxin/Furan emission rate was nearly constant at about 0.011 grains per 1×10^9 dscf. This was the naturally occurring emission rate for the American Waste incinerator units without any sorbent injection. Since the emission limit is part of the Federal Plan for HMIWI units, it can not be removed from the Title V permit at this time. As the State Plan is approved and takes effect for these units, the NSR permit and the Title V permit may be reopened to correct this. Therefore, the minimum sorbent flow rate for the control of Dioxins/Furans is zero lbs per hour.

The minimum secondary-chamber temperature was established at 1740.6 °F by the stack test of July, 2002. The facility will use this temperature to show compliance (once this Title V permit has been issued).

Mercury emissions were initially above the limit of 0.24 grains per 1×10^3 dry standard cubic feet at 7.0% Oxygen and the average value was 0.26 grains per 1000 dscf. The facility made an intentional choice to limit the waste throughput to 1460 lbs per hour per unit in order to eliminate the need for a separate sorbent injection to control mercury and meet the emission limits. Therefore, the minimum sorbent flow rate for mercury in this permit will be zero lbs per hour.

There were no surprises concerning the HCl sorbent flow rate, since this process has been used at the facility for many years. The minimum flow rate for this sorbent has been established at 90 lbs per hour. The fabric filter maximum inlet temperature was established at 473 °F.

The results of this stack test are an integral part of this Title V permit action and contain values for parameters that will be used to show compliance with the regulations. The stack test excerpts that show the six parameters listed above are an attachment to the 2001 NSR permit (Attachment A). The parameters that were established by this stack test augment the applicable requirements in the Title V permit and contain the most recent data for this facility.

COMPLIANCE ASSURANCE MONITORING

All of the emission units at a Title V facility that are major for a pollutant and meet other applicability criteria must be considered as facilities that may be subject to the CAM Rule. AWI has two emissions units that are considered major for emissions of HCl. The incinerators are not major for PM10, and thus do not require any CAM provisions for the control of PM10. Periodic monitoring is appropriate in the case of pollutants not subject to the Rule. In the case of the incinerator emission units at AWI, the CAM decision process is described below:

40 CFR 64.2 reads as follows for affected sources:

Yes (a.) The requirements of this rule apply to Pollutant Specific Emission Units at a major source for that pollutant, at a facility that is subject to Title V permitting.

Yes (1.) Does the emissions unit have pollutant emission limits in the permit?

Yes (2.) Does the unit have a control device to achieve compliance with the emission limit or standard? (i.e., a fabric filter, etc).

No (3.) Does the unit have a PTE for any pollutant that is equal to a major source?

(b.) Exemptions

(1.) Exempt emission limitations or standards. The requirements of this part shall not apply to any of the following:

Yes (i.) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 or the Act.

By examining the CAM Rule, it is evident that it should be applied only to the affected emissions units. Therefore, the Rule applies to the incinerator units, which are the only significant units at this facility. When looking for other significant emissions units where CAM might apply, none are found. Under 40 CFR 64.2 (b)(1)(i) of the CAM Rule, the two incinerator units are found to be exempt because of the promulgation of the Federal Plan for HMIWI. This Plan supersedes the CAM Rule in that it contains adequate monitoring provisions within the parameters prescribed therein. Therefore, CAM does not require any further changes in monitoring at this facility at this time.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

| Emission Unit ID | Stack ID | Emission Unit Description | Size/Rated Capacity* | Applicable Permit Date |
|------------------|----------|------------------------------|----------------------|---------------------------|
| INE-002 | INS-002 | Incinerator, Consumat CS-760 | 1950 lbs/hour | NSR permit August 8, 2001 |
| INE-003 | INS-002 | Incinerator, Consumat CS-760 | 1950 lbs/hour | NSR permit August 8, 2001 |

Pollution Control Equipment consists of:

| Stack No. | Control Equipment Description | Manufacturer and Date of Construction | Size/Rated Capacity | Pollutant |
|-----------|-------------------------------|---------------------------------------|---------------------|-----------------------------------|
| INS-002 | afterburner | Consumat DS760Q | | PM, CO, opacity |
| INS-002 | dry scrubber system | Consumat DS760Q | 90% | HCl, dioxins, furans and mercury. |
| INS-002 | cyclone scrubber | Consumat DS760Q | | PM |
| INS-002 | fabric filter | Consumat DS760Q | | PM, lead, cadmium and mercury |
| INS-002 | afterburner | Consumat DS760Q | | PM, CO, opacity |
| INS-002 | dry scrubber system | Consumat DS760Q | 90% | HCl, dioxins, furans and mercury. |
| INS-002 | cyclone scrubber | Consumat DS760Q | | PM |
| INS-002 | fabric filter | Consumat DS760Q | | PM, lead, cadmium and mercury. |

EMISSIONS INVENTORY

A copy of the emissions for the 2002 emissions statement is attached. Emissions are summarized in the following tables. Emissions from the small boiler are not included here.

2002 Actual Emissions

| | 2002 Criteria Pollutant Emissions in Tons per Year | | | | | |
|---------------|--|-------|-----------------|-------------------|-----------------|----------|
| Emission Unit | VOC | CO | SO ₂ | *PM ₁₀ | NO _x | Lead(Pb) |
| INE-002 | 0.556 | 0.093 | 0.763 | 0.874 | 18.549 | 0.073 |
| INE-003 | 0.517 | 0.086 | 0.709 | 0.813 | 17.243 | 0.073 |
| Total | 1.09 | 0.516 | 1.47 | 1.69 | 36.19 | 0.146 |

* PM2.5 emissions were identical to the PM10 emissions above.

2002 Facility Hazardous Air Pollutant Emissions

| Pollutant | 2002 Hazardous Air Pollutant Emission in Tons/Yr |
|-------------------|--|
| Hydrogen Chloride | 23.98 |

EMISSION UNIT APPLICABLE REQUIREMENTS - [INE-002 and INE-003]

Limitations

Following are limitations from the existing NSR permit issued August 8, 2001:

- Condition 3: cites the applicable regulations for this facility.
- Condition 4: describes the control technology for selected pollutants.
- Condition 5: establishing the maximum and minimum operating parameters for the incinerators.
- Conditions 7 and 9: limiting waste throughput and auxiliary fuel type.
- Condition 10: limiting the criteria pollutant emissions and the HAP emissions.
- Condition 11: limiting visible emissions (opacity limitation).

Recordkeeping

Following are recordkeeping requirements from the existing NSR permit issued August 8, 2001.

Condition 13(a): requires HMIWI charge dates, times and weights and hourly charge rates; fabric filter inlet temperatures each minute, hourly rates/type for dioxin/furan sorbent, hourly rates/type for mercury sorbent, hourly rates/type for hydrogen chloride sorbent, secondary chamber temperatures each minute and records showing use of the bypass stack, dates, times and durations.

- Condition 13(b): missing data reports for 13(a) requirements.
- Condition 13(c): dates, times and durations of malfunctions.
- Condition 13(d): records of excess emission rates or operating parameters.
- Condition 13(e): results of initial and subsequent emissions tests.
- Condition 13(f): names of operators who have completed review of operating procedures.
- Condition 13(g): names of operators who have completed HMIWI training requirements.
- Condition 13(h): names of operators who have qualified as HMIWI operators.
- Condition 13(i): monitoring device calibrations.

Testing and Monitoring

Following are testing/monitoring requirements from the existing NSR permit issued August 8, 2001.

- Condition 14: Requirements for periodic testing
- Condition 15: Repeat emissions tests.
- Condition 16: Required monitoring devices to record the operating parameters.
- Condition 17: Outlines minimum monitoring data: 75% of hours and 90% of operating days.

Reporting and Notifications

Following are reporting/notification requirements from the existing NSR permit issued August 8, 2001.

- Condition 18: Requirements for the initial performance test and semiannual reports.
- Condition 19: requiring notification to DEQ/EPA about performance test dates for incinerators.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5-50-80: New Source Standard for Visible Emissions

Streamlined Requirements

The following requirements from the existing NSR permit issued August 8, 2001 have been streamlined in the Title V permit at the indicated Condition Numbers.

Condition 4: modified to include the stack test data from the NSR permit, Attachment A to clarify that some control strategies have changed as a result of the stack test. Now, mercury emissions are controlled by limiting trash throughput and dioxins/furans need no sorbent to meet emission limits (III.A.1).

Condition 3: cites the applicable regulation at the time of the permit issuance in August of 2001. However, since that time a Part 62 Federal Plan for HMIWI facilities has been implemented and is the currently applicable regulation for this facility. The streamlined condition is replaced with one that cites the Federal Plan and Article 4-44 as the applicable regulations (see III.A.6.)

Condition 7: Contained an interim trash throughput for the incinerators until the stack test could verify the maximum pounds. The stack test excerpts attached to the NSR permit now as Attachment A, have established the maximum trash throughput at 1460 pounds per hour to limit mercury emissions. This new throughput has been entered in the Title V 'Throughput' condition at III.A.3.

Condition 16 & 6: requires certain monitoring equipment and work practices, but is similar to the data collection requirements listed in Condition 16 of the NSR permit, for the parameters monitored. Therefore Condition 6 is streamlined and the remaining requirements have been included in III.B.1.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

This general condition cite(s) the Article(s) that follow(s):

Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources

This general condition cites the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation, see the comments on general condition F.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

9 VAC 5-80-110. Permit Content

STATE ONLY APPLICABLE REQUIREMENTS

The state-only applicable requirements for this facility are found in the State Only Section of the permit and describe the standards for odor and toxic pollutants:

9 VAC 5-50-140 Standard for Odorous Emissions, and

9 VAC 5-60-320 Standard for Toxic Pollutants

FUTURE APPLICABLE REQUIREMENTS

When the 'State Plan' for HMIWI facilities is approved by the EPA, this permit will need to be amended to incorporate the 'State Plan' citations and requirements. Prior to the reopening of the Title V permit, the existing New Source Review permit will need to be amended.

INAPPLICABLE REQUIREMENTS

Tanks previously subject only to recordkeeping and reporting under 40 CFR 60, Subpart Kb have been exempted by EPA's recent amendment of Subpart Kb (see Wednesday, October 15, 2003, Federal Register, attached).

COMPLIANCE PLAN

There is no compliance plan for this facility.

INSIGNIFICANT EMISSION UNITS

The following units have been identified as insignificant:

| Emission Unit No. | Emission Unit Description | Citation | Pollutant(s) Emitted (9 VAC 5-80-720 B) | Rated Capacity (9 VAC 5-80-720 C) |
|-------------------|---------------------------|----------------|--|-----------------------------------|
| BOE-001 | natural gas-fired boiler | 5-80-720 C.2.a | SO ₂ , NO _x , PM ₁₀ , CO, VOC | 5 mmBtu/hour |
| AHE01 | Ash handling process | 5-80-720 B.1. | PM ₁₀ | emissions < 0.5 tons |
| | | | | |

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in the Virginian-Pilot once on Saturday, March 20, 2004.